

Title (en)

METHOD FOR FRICTION-STIR WELDING OF STEEL SHEET

Title (de)

VERFAHREN ZUM RÜHRREIBSCHWEISSEN VON STAHLBLECH

Title (fr)

PROCÉDÉ DE SOUDAGE PAR FRICTION-MALAXAGE D'UNE FEUILLE D'ACIER

Publication

EP 2835209 B1 20160907 (EN)

Application

EP 13772114 A 20130404

Priority

- JP 2012086924 A 20120406
- JP 2013002349 W 20130404

Abstract (en)

[origin: EP2835209A1] When friction-stir welding steel sheets, for the rotating tool, rotation speed RS is set 100-1000 rpm, rotational torque RT 50-500 Nm, and travel speed TS 10-1000 mm/min, and HIPT (kJ/mm²) is controlled to be in a range of 0.3-1.5. The steel sheets that are used have a composition including 0.01-0.2 mass% of C, 0.5-2.0 mass% of Mn, 0.6 mass% or less of Si, 0.030 mass% or less of P, 0.015 mass% or less of S, and 0.0060 mass% or less of O, with a content of Ti [%Ti] and a content of N [%N] being restricted in relation to the HIPT, Ceq being 0.5 mass% or less, and the balance being Fe and incidental impurities. As a result, local change in the frictional heat and plastic flow generated by friction can be prevented, yielding a weld portion with uniform and good toughness.

IPC 8 full level

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CPC (source: CN EP US)

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Cited by

US12059741B2; US11707798B2; US11130194B2; US11654508B2; EP3900868A4; CN109562485A; EP3498415A4; US11707799B2; WO2022200585A1; US10766099B2; US11654507B2; US11712748B2

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